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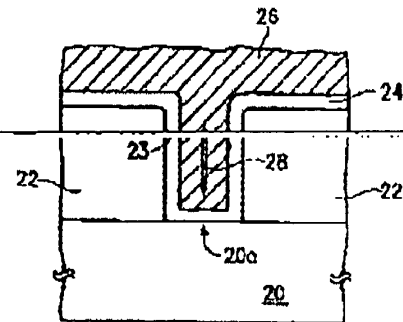
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## (54) MANUFACTURE OF CONDUCTIVE PLUG

(57)Abstract:

**PROBLEM TO BE SOLVED:** To prevent the generation of voids in a conductive plug and to prevent the resistance value of the plug from being increased by a method, wherein a diffusion barrier layer is formed on an exposed conductive region and the peripheral part of a contact window and a hydrogen plasma treatment is performed to fill a conductive material in the contact window.

**SOLUTION:** A diffusion barrier layer 24 is formed on a region 20a made of a conductive material, the periphery of a contact window 23 and the upper surface of an insulating layer 22 and a hydrogen plasma treatment is performed on the conditions of power of 3000W or lower, a hydrogen flow rate of 3000sccm or lower, a reaction temperature of 1000°C or lower and 10-second to 10-minute reaction intervals. A conductive material 26, such as tungsten, is filled in the window 23 by a PVD or the like and a conductive plug having the smallest void 28 is formed. Accordingly, the problem of the generation of voids is dissolved, and the contact resistance value of the plug can be reduced.



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(55)【発明の名称】 敏感プラグの製造方法

(57)【要約】

【目的】 敏感プラグの製造方法を開示する。

【構成】 敏感プラグを形成するプロセスは、まず、基板に敏感プラグの形成領域を定義し、その領域に敏感プラグの形成材料を塗布する。次に、敏感プラグの形成材料を乾燥し、敏感プラグの形成領域に敏感プラグの形成材料を堆積させる。最後に、敏感プラグの形成材料を研磨し、敏感プラグの形成領域に敏感プラグの形成材料を露出させる。

